

Sound Collaboration: the design and implementation of an online phonetics course

Steven H. Weinberger

Hussain Almalki

Larisa Olesova

George Mason University

OLC Innovate 2020

Overview



THE PURPOSE OF
TALK



THE CHALLENGES



BACKGROUND



WHAT IS
PHONETICS



THE SPEECH
ACCENT ARCHIVE



THE ONLINE CLASS
TECHNOLOGY



OUTCOMES



RESIDUAL
PROBLEMS



REFLECTION
SESSION



QUESTIONS



Purpose of the talk



to demonstrate that an academic discipline with sparse online presence can indeed be distance-taught



to describe such an endeavor with a focus on collaborative peer-to-peer learning



to report on the incorporation of specific fully-accessible online tools to enhance student success

The challenges



most language learning programs have integrated pronunciation instruction in their curriculum



many teachers find teaching pronunciation difficult for a number of reasons



phonetic training is considered necessary

The goals of any phonetic training in language teacher preparation:



provides the necessary knowledge to understand how speech sounds are made



teaches how to best convey this knowledge to their own language-learning students



Trains how to diagnose and predict various pronunciation problems and develop intervention plan to address them

The challenge in designing an online phonetics course



A phonetics course in the TESL program needs to focus on **pedagogical** aspects and methodology of teaching pronunciation in addition to the **theoretical** and descriptive knowledge.



It needs to take into consideration the non-native English-speaking international students whose goal is to teach ESL in their home countries.



It needs to ensure ***a high level of students' engagement, interaction, and extensive practice.***

OLC Quality Framework: Five Pillars of Quality Online Education



LEARNING



FACULTY



STUDENTS



SCALE



ACCESS

The Learning Effectiveness Pillar



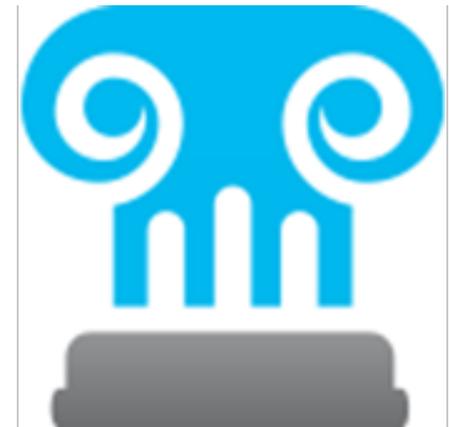
LEARNING

Effective Practices:

- Course Design
- Learning Resources
- Faculty Development
- Learner Characteristics
- Pedagogy
- ***Interaction (eg., with content, faculty, other students; development of learning communities etc)***
- Assessment
- Learning Outcomes (eg. student satisfaction, retention, achievement, performance, etc)

Online Interaction in Active Learning

- According to the 2017 New Media Consortium Horizon Report, more leaders across the globe emphasize student active learning to advance cultures of innovation.
- Interaction: “an event that takes place between a learner and learner’s environment and its purpose is to respond to the learner in a way intended to change his or her behavior toward an educational goal” (Wagner, 2005, p. 9)



LEARNING

Interaction has become an important component to promote meaningful learning in online courses (Becker et al., 2017).



LEARNING



Learner-Content
interaction



Instructor-Learner
interaction



Learner-Learner
interaction



LEARNING

Learner-Content Interaction

Types of active learning in online courses students reported as engaging (Bolliger & Martin, 2018):



Students work on realistic scenarios to apply content (e.g., case studies, reports, research papers, presentations, client projects)



Discussions are structured with guiding questions and/or prompts to deepen their understanding of the content



Students interact with content in more than one format (e.g., text, video, audio, interactive games or simulations)



Students use optional online resources to explore topics in more depth



Students have an opportunity to reflect on important elements of the course (e.g., use of communication tools, their learning, team projects, and community)



LEARNING

Instructor-Learner Interaction

Types of active learning in online courses students reported as engaging (Bolliger & Martin, 2018):



Sends/posts regular announcements or email reminders



Posts grading rubrics for all assignments



Students interact with content in more than one format (e.g., text, video, audio, interactive games or simulations)



Creates a forum for students to contact the instructor with questions about the course



Posts a “due date checklist” at the end of each instructional unit



Refers to students by names in discussion forums



Creates a course orientation for students



LEARNING

Learner-Learner Interaction

Types of active learning in online courses students reported as engaging:
(Bolliger & Martin (2018))



Introduce themselves using an ice-breaker discussion



Work collaboratively using online communication tools to complete case studies, projects, reports, etc.



Interact with peers through student presentations (asynchronously and synchronously)



Have choices in the selection of readings (articles, books) that drive discussion group formation



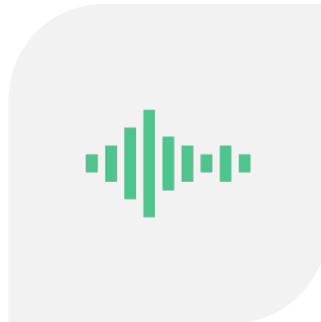
Peer review classmates' work

What is phonetics?

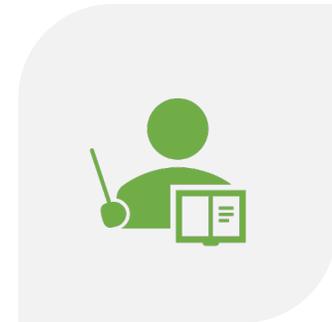
The study of human speech sounds



ARTICULATORY—HOW THE
SOUNDS ARE MADE IN THE
MOUTH



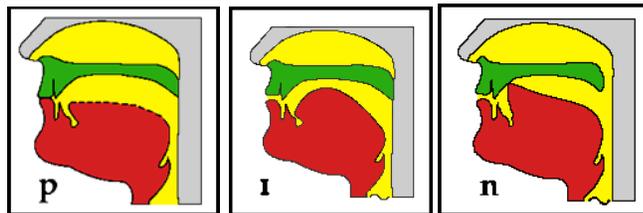
ACOUSTIC—HOW THE SOUNDS
ARE MEASURED



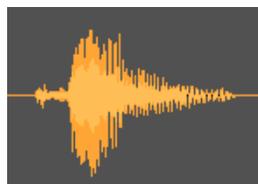
PHONETIC TRANSCRIPTION—
HOW SOUNDS ARE REPRESENTED
WITH SYMBOLS

English word “pin”

- Articulatory



- Acoustic



- Phonetic transcription [p^hiːn]



Phonetics and ESL



Since English language teachers must impart the knowledge of English into the minds of second language learners, and since phonetic knowledge is part of English, then teachers need to explicitly train these learners.



The notion of foreign accent:
--Foreign accent and interlegibility
--Foreign accent and its social consequences



The notion of a *native speaker*

Teaching phonetics: goals



Theoretical knowledge

Description and analysis of native English sounds
Sources of pronunciation problems in the second language



Applied knowledge

- Learning to phonetically transcribe speech
- Issues in the teaching and learning of these sounds for non-natives
- Analysis of non-native English speakers (analyze, diagnose, intervene)



How to best teach phonetics



Train teachers to be close listeners through exposure to lots of accents (benefits of familiarity)



Use IPA with speech transcription



Ensure a collaborative and introspective enterprise

The speech accent archive

accent.gmu.edu

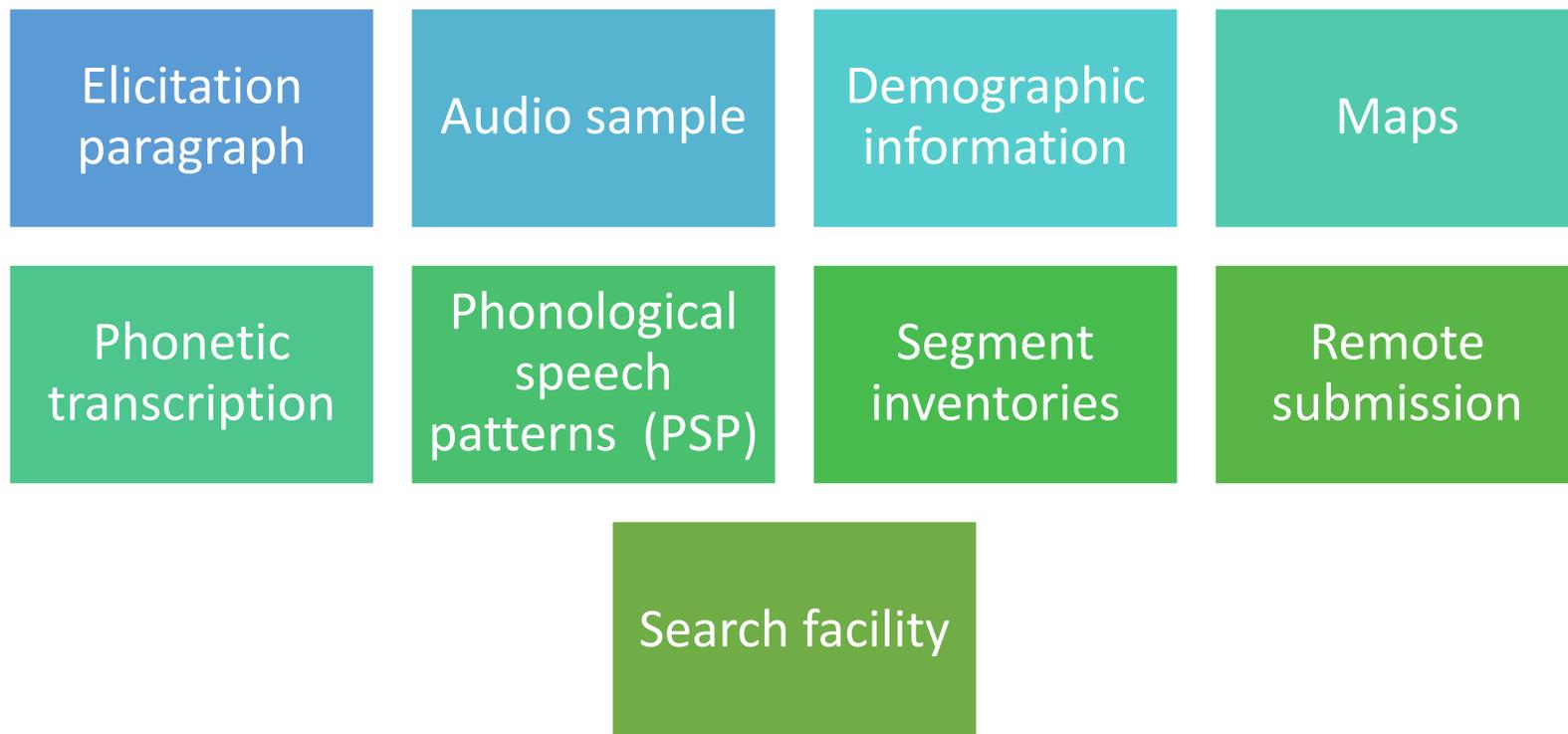


an open annotated
collection of accent
contributions

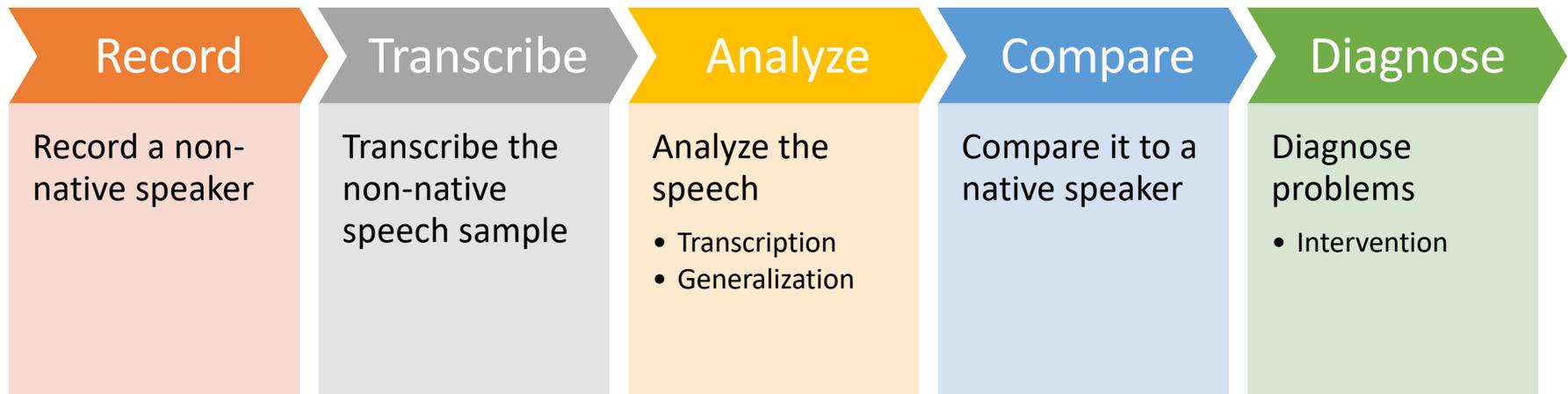
- 2,933 samples of accented English—both native and nonnative
- 265 native languages
- 1,523 cities
- 181 countries

students in the class
participate in a
semester-long project
utilizing and contributing
to the archive

Archive architecture: components



LING 523: English Phonetics: The assignment (prelude to class project)



How to do this online



The collaborative assignment- this is a major aspect of the class!

Student interaction

Feedback



There is a product!



The wiki

LING 523: A non-native speech sample: Mandarin28



Please call Stella. Ask her to bring these things with her from the store: Six spoons of fresh snow peas, five thick slabs of blue cheese, and maybe a snack for her brother Bob. We also need a small plastic snake and a big toy frog for the kids. She can scoop these things into three red bags, and we will go meet her Wednesday at the train station.

LING 523: Goal: transcribe the sample and reach consensus



A phonetic transcription is an *analysis* of speech



It draws upon a listener's perceptual and linguistic knowledge



It is more of an art, than a science



Typically utilizes multiple human listeners

how to reach consensus online?



wiki



Discussion board

LING 523: The wiki: instructions



Create Wiki Page

Wiki Instructions ^

Listen to our chosen NNS sample from the speech accent archive. Narrowly transcribe (with your IPA font) the the sentences listed below. provide comments on other student's transcriptions if you wish.

We will all comment on these transcriptions and reach some consensus on a final draft transcription.

Before working on the wiki, please watch this tutorial which helps you work successfully:

- [Creating and Editing a Wiki Page](#)

1. You will use the same wiki page to work collaboratively.
2. To participate in this activity, click on **Click to Launch**.
3. When you are in a wiki page, click on **Edit Wiki Content**.
4. Add the required information to the wiki page and don't forget to hit **Submit** when you are done.
5. The instructor will use History feature in the wiki to see how many times the wiki page was edited, who edited and when it was edited to track changes. Your contribution will be reflected in wiki statistics that the instructor will use for grading.
6. Keep in Mind: When you are editing a wiki page, it is locked to prevent others from editing the same page at the same time.



LING 523: The wiki: week 6

your name	transcription: <i>please call stella. ask her to bring these things with her from the store.</i>
Student 1	[pli:s kəl stɛlə æsk hə tu bɪŋ ði:z θɪŋz wɪθ hɜ: fɪɹm ðə stɔ:]
Student 2	[p ^h li:z kəl stɛlə ask ⁷ h ɜ: tu bɪŋ di:z θɪŋz wɪθ hɜ: fɪɹm ðə stɔ:]
Student 3	[pɹlis kal ^y 'stɛ:lə æskə hə t ^h u bɪŋ ðis θɪŋs wɪθ hə fɪɹm ðə stɔ:]
Student 4	[p ^h ə'li:s kɔ: 'stɛ:lə 'ɛskə hə t ^h u bɪ:n di:s θɪns wɪθ hə fɪɹm ðə stɔ:ɹ]
Student 5	[p ^h lis kol ^y stɛlə æsk hə t ^h u bɪn ðis θɪŋz wɪθ hə fɪɹm ðə stɔ:ɹ]
Student 6	[p ^h ə'li:s kə 'stɛ:lə 'asgə hə t ^h u bɪ:n di:s θɪns wɪθ hə fɪɹm ðə stɔ:ɹ]
consensus:	p ^h əlis k ^h ə stɛlə æskə hə tu bɪn di:s tɪns wɪθ hə fɪɹm ðə stɔ:ɹ

LING 523: The wiki: week 7



your name	transcription: <i>six spoons of fresh snow peas, five thick slabs of blue cheese, and maybe a snack for her brother bob</i>
Student 1	[sɪks spū:ms əf friɛʃ sno bis faɪv θɪk ^ɹ ʃlæbəs əf bɹu tʃɪs æ:n mebi ʌ snæk ^ɹ foə hɜ: bɹʌðəzɪ bab].
Student 4	[sɪks spū:nz əf friɛʃ sno bi:s faɪf θɪk ^ɹ slæps əf bɹu tʃi:s æm meɪbi æ snæk ^ɹ fɔɪ hæ bɹʌðə bl:p]
Student 1	[sɪks pūns əʏ friɛʃ sno: bi:s faɪv θɪk əslæbəs ʌv bɹou tʃi:s ə meɪ:b ^h i ə snæk ^h fɔ hɜ: b ^h ɹʌðə bæp]
Student 5	[sɪk spū:ms əf friɛʃ sno: bi:s faɪf θɪk ^ɹ slæbs əf bɹu tʃi:z æn meɪbi ə snæk ^ɹ fɔɪ hɜ: bɹʌðə bap]
Student 3	[sɪks p ^w ū:ns əv friɛʃ sn ^w ou bis faɪf θɪk ^ɹ slæ:bs əvə bɹ ^w u tʃɪs æ:n 'meɪ:bi ə snæk ^ɹ f ^w ɔ:r hɜ:ɪ 'brʌðɹ bap]
Student 6	[sɪks bu:ns əʏ friɛʃ sno bis faɪf θɪk ^ɹ slæps əfvu bɹu tʃɪs æ:n mebi ə snæk ^ɹ fɔɪ hæ bɹʌðə bap]
Consensus	[sɪks spūns əf friɛʃ sno bi:s faɪf θɪk slæps əʏə bru tʃɪs æm meɪbi a snæk fɔɪ hæ bɹʌðə bɑ:b]

LING 523: The wiki: week 8



your name	transcription: <i>we also need a small plastic snake and a big toy frog for the kids</i>
Student 1	[wə ɔlsə ni: ə smɔ:l plæstɪkˈ sneɪkˈ ən ʌ bɪk tɔɪ frɔ:ɡ fɔɪ θə kɪdz]
Student 3	[wə ˈɔlso ni ə smɔ:lˈ plæstɪk sneɪk æn ə bɪɡ tˈɔɪ frɔɡ fɔɪ ðə kɪdz]
Student 4	[wə ɔso ni æ smɔ plæstɪk sneɪkˈ eɪ ə bɪɡ tɔɪ frɔag fɔ ðə kɪdz]
Student 5	[wə ɔlso ni ə smɔl plæstɪk sneɪkˈ æn ə bɪɡ tˈɔɪ frɔɡ fə ðə kɪdz]
Student 2	[wi ɑsu niɔ ʌ s:mɔlˈ pˈlæstɪk s:nɪk æ:n ə bɪɡˈ tɔɪ frɔk fɔɪ də kedz]
Student 6	[wə ɔlso ni ə smɔ plæstɪk sneɪk æn ə bɪɡ tˈɔɪ frɔɡ fɔɪ ðə kɪdz]
Consensus	[wə ɔlso ni? a smɔ: plæstɪk sneɪk əŋ a bɪk tˈɔɪ frɔɡ fɔ ðə kɪdz]

LING 523: The wiki: week 9



your name	transcription: <i>she can scoop these things into three red bags, and we will go meet her Wednesday at the train station.</i>
Student 3	[ʃi kɑn skop dis θiŋs 'ɪntu θri jɛb bæks æn wi wiw go mi: hɜ: 'wɛnsdeɪ ət de tʃreɪn steɪʃn]
Student 4	[ʃi kɛn skoup ^h ðis θɪns ɪntu θri jæ bæks əm wi wi gou mi həɪ wɛnsdeɪ æt ⁷ ðə tɹeɪn steɪʃn]
Student 1	[ʃi kɑns kop dis θiŋs ɪntu θri jəb bæks ənwɪwɪl go mi həɪ wɛnsdɛ ət tɹ tʃreɪn steɪʃn]
Student 6	[ʃi kæn skoup ^h ðis θɪns ɪntu θri jæ bæks əm wu wi gou mi həɪ wɛnsdeɪ æt ⁷ də tɹeɪn steɪʃn]
Student 2	[ʃi kɑ:n skoup ^h dɜs θɪns ɪntu tɹi jæ bæks ən wi wiw go mi hɜ: wɛnsdeɪ æt də tɹeɪn steɪʃn].
Student 5	[ʃi Kæn skop dis θɪns ɪntu θri jæ bæks æn wi wi gou mi hɜ: wɛnsdeɪ æt də tʃreɪn steɪʃn]
Consensus	ʃi kɑn skoup ^h dis θiŋs ɪntu tɹi jɛ: bæks ən wi wil go mi həɪ wɛnsdeɪ æt ⁷ də tʃreɪn steɪʃn

LING 523: Discussion area excerpts



“D: This week I really struggled with the coronal consonants of this speaker. It is a d, t, θ, or ð? I really did not think that I hear a true interdental fricative at all. So I tended to transcribe a dentalized [t]. No one else did this (at the time I posted) so I have yet to see anyone agreeing with this interpretation.”



“A: According to the last week transcription, I feel very pleased that our transcriptions have been improved. In overall, there is a kind of disagreement that is noticeable in our transcriptions. That is, no one got the glottal stop in “need”. In addition, no one got the transcription of [a] as a corresponding sound in “a small”. The /k/ and /g/, /s/ and /z/ in final positions were very confusing for most of us. Moreover, I think I heard /l/ in “small” and it was completely unexpected no to find it in consensus.”



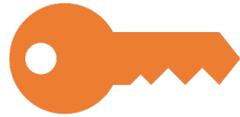
“B: I think that slowly but surely we are learning more and more about transcribing a native mandarin speaker, and that each week our transcriptions do improve due to that incremental knowledge. I think the ‘aha’ moments where we become aware of a devoiced segment, or are shocked by a glottal stop, are what help push us forward. We don’t know what to pay attention to yet, what we’re looking for, and because of that we see what we expect to see. I still find this a near-maddening process, but I’m beginning to appreciate it much more.”

LING 523: Final transcription: Mandarin28



[p^həlɪs k^həl^v stɛlə æskə hə t^wu
bɪŋ dɪs tɪŋs wɪθ hə fɪəm dɛ stəɹ
sɪks pū:ns əf fɪɛf snou bɪ:s faɪf θɪk⁷
slæps əfu bru tʃi:s əm mebi ʌ
snæk fɔɹ hə bɪʌdə bəp wɪ? əs^vü
ni? ɛ sməl^v p^hlæstɪk snek ɛŋə bɪk⁷
təɹ fɪak fɔ dɛ k^hɪts ʃi kʌn skoup
dɪs tɪns ɪntu θri: .ɹɛ: bæks əm
wʊ wɪ go mi hə wɛnstɛ ɛt⁷ dɛ
tʃɹɛŋ stɛɪʃən]

What makes the online aspect unique?



Access



Type of student



Interaction

The technology



Blackboard (Wiki, discussion board, ask professor, homework collaboration, group projects)



Praat, Audacity



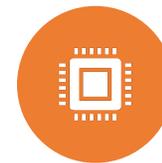
Smart phones



Microphones



Software



Crowdsourcing application???

Outcomes (to be continued)



The F-2-F analogue showed student progress

- 10.3% improvement on transcription accuracy overall
 - 8.5% improvement on group without crowdsource tutorial
 - 12.5% improvement on group with crowdsource tutorial

This sets the expectations for the fully online class

Residual problems



Bb wiki must be made more specialized

users should not have to leave page for audio and discussion



Need to develop a *no-contact* method of recording informants



Need to expand the crowdsource transcription tutorial

Reflective session



- Listen to some accented English
- Focus on these words:
- What do you notice?



Questions

references

- Bolliger, D. U., & Martin, F. (2018). Instructor and student perceptions of online student engagement strategies. *Distance Education*, 39(4), 568-583.